PROJECT NUMBER: 1309
PROJECT TITLE : Cast Leaf Development
PROJECT LEADER : G. Gellatly
PERIOD COVERED : December, 1990

CAST LEAF DEVELOPMENT

A. **Objective:** Develop subjectively and physically acceptable reconstituted tobacco sheets for domestic and international application using cast leaf technology and proprietary binder systems.

B. **Results:** **Cast Leaf Pilot Plant** - The dryer bids were issued and Somerset Technologies was selected on the basis of their expertise, low price, and satisfactory delivery time. This company can also supply the reverse roll coater and lecithin applicator. P&ID's and G.A. drawings have been finalized by Sirrine for approval by PM.

Cast Leaf Development - The heater below the Glenro heater belt was installed and is being evaluated. A significantly improved guar gum product has been produced in the Cast Leaf Laboratory using below belt heating only. Acceptable sheet using guar binder has been produced using two feedstocks (RL/BL blend and TSA blend using US components).

Cadiz - ASTA qualification trials were run in Cadiz. The plant operation was very steady and good quality sheet was produced. Three boxes of product were selected during each day of the five day trial (15 x 330 lbs = 4950 lbs) for shipment to USA for evaluation for subjective character and physical survivability. Cigarettes containing this product at 4 percent and 7 percent substitution of RCB in a Spanish MF blend will be made in the Semiworks in mid-January after the product has aged for one month. The ASTA product was doctored from the casting belt at 23 percent OV and dried to 13 percent OV in the drying cylinder. This post-drying crinkled the sheet to look like natural strip which prevented the settling in the packing case previously seen with the flat paper-like product.

The product was cooled after drying with refrigerated air to 72°F before packing. Four boxes were selected to follow the temperature changes and to study product darkening within the boxes with time. Four thermocouples were inserted in each box. The packout temperatures were much lower than experienced in the July and no significant change in case temperature occurred. Samples from the center and sides of the box were taken four days after packing, frozen, and hand carried to USA for examination for chemical change.

C. **Plans:**

1. Determine the conditions of OV, packout temperature, and packing density necessary to induce ASTA product darkening in the laboratory.

2. Rerun temperature and chemical profiles in packing cases in Cadiz during summer conditions.

3. Continue binder and flavor development work to optimize the cast sheet formulation for USA and TSA.

4. Develop a trial schedule for SIVA trials in Cadiz 1Q/91. These trials will also evaluate the effect of the gum eductor and air removal from slurry on sheet quality.

5. Continue work with PM Engineering on design and installation of the Cast Leaf Pilot Plant.